

SERVICE MANUAL

COMPACT DISC RECORDER

BASIC CD MECHANISM : PH1621011/A

- This Service Manual is the "Revision Publishing" and replaces "Simple Manual" (S/M Code No. 09-002-420-3T1).

SPECIFICATIONS

Discs supported	CD/CD-R/CD-W for digital audio
Frequency response	20 Hz to 20 kHz
Playback signal-to-noise ratio	95 dB
Playback total harmonic distortion	Less than 0.01 %
Digital input sampling frequency range	32 to 48 kHz (sampling rate conversion)
Digital input format	IEC 60958
Recording format	16 bits, 44.1 kHz
Analog in	RCA
Analog out	RCA
Digital in	Optical, Coaxial
Digital out	Optical
Power supply	120 V AC, 60 Hz
Power consumption	18 W
Dimensions (W x H x D)	260 x 93 x 327.4 mm (10.24 x 3.66 x 12.89 in.)
Weight	3.5 kg (8 lbs 12 oz.)

- Design and specifications are subject to change without notice.

ACCESSORIES / PACKAGE LIST

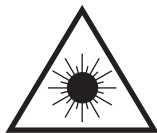
REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	8A-AJ1-903-010	IB,U(ESF)-I	
2	87-A80-032-010	CORD,PIN 2P RED-WHT	
3	87-B30-024-010	CABLE,OPTICAL MC-901	
4	8A-AJ1-951-010	RC UNIT,RC-AAC01(E)	

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs laser. Therefore, be sure to follow carefully the instructions below when servicing.

WARNING!!

WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION. BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 30cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.



- Caution: Invisible laser radiation when open and interlocks defeated avoid exposure to beam.
- Advarsel: Usynlig laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

VAROITUS!

Laiteen Käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyt-täjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

WARNING!

Om apparaten används på annat sätt än vad som specificeras i denna bruksanvisning, kan användaren utsättas för osynlig laserstråling, som överskrider gränsen för laserklass 1.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

ATTENTION

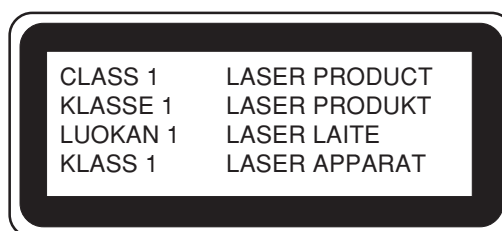
L'utilisation de commandes, réglages ou procédures autres que ceux spécifiés peut entraîner une dangereuse exposition aux radiations.

ADVARSEL

Usynlig laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

This Compact Disc player is classified as a CLASS 1 LASER product.

The CLASS 1 LASER PRODUCT label is located on the rear exterior.



ELECTRICAL MAIN PARTS LIST

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION	REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
IC				C132	87-010-252-080		CAP,ELECT 1000-6.3V
	87-A21-459-040		C-IC,TC74ACT245F	C133	87-010-391-040		CAP,E 10-35 SME
	87-A21-458-040		C-IC,TC74ACT244F	C134	87-012-142-080		CAP,S 0.33-16
	8A-AJ1-627-010		C-IC,EPP6016TC144-3	C135	87-010-112-040		CAP,E 100-16
	87-A20-696-010		C-IC,AM186EM-33KC/W	C136	87-012-368-080		C-CAP,S 0.1-50 F
	8A-AJ1-621-010		C-IC ASSY,MBM29F400TC*1 AAJ1	C137	87-012-368-080		C-CAP,S 0.1-50 F
	8A-AJ1-626-040		C-IC,AT25160N-10SC	C138	87-012-368-080		C-CAP,S 0.1-50 F
	87-017-830-080		IC,TC7W14FU	C139	87-012-368-080		C-CAP,S 0.1-50 F
	8A-AJ1-625-040		C-IC,KM6164000BLT-7LT	C140	87-010-154-080		CAP CHIP,10P
	87-A20-185-080		C-IC,PST600DMT	C201	87-010-197-080		CAP,CHIP 0.01 DM
	8A-AJ1-628-010		IC,EPC1441PC8	C203	87-012-368-080		C-CAP,S 0.1-50 F
	8A-AJ1-616-040		C-IC,CS8420-CS	C204	87-016-526-080		C-CAP,S 0.47-16 BK
	8A-AJ1-617-040		C-IC,CS4222-KS	C205	87-010-189-080		C-CAP,S 8200P-50 B
	87-017-585-080		IC,NJM4580E	C206	87-012-368-080		C-CAP,S 0.1-50 F
	87-020-882-080		IC,NJM79L05	C207	87-010-994-080		C-CAP,S 680P-50 J CH
	87-002-903-080		IC,TC4W53F	C208	88-XMY-614-080		C-CAP,TN 10U-10 TCFG A
	87-027-842-080		IC,NJM2904M	C209	87-012-368-080		C-CAP,S 0.1-50 F
	87-A21-321-010		IC,TOTX178A	C210	87-012-368-080		C-CAP,S 0.1-50 F
	87-A21-322-010		IC,TORX178A	C211	88-XMY-614-080		C-CAP,TN 10U-10 TCFG A
	87-001-604-080		IC,TC74HCU04M	C212	87-010-182-080		C-CAP,S 2200P-50 B
	87-A20-672-010		C-IC,BU2872AK	C213	87-010-182-080		C-CAP,S 2200P-50 B
	87-070-083-010		IC,GP1U281X	C214	87-010-182-080		C-CAP,S 2200P-50 B
TRANSISTOR				C215	87-010-182-080		C-CAP,S 2200P-50 B
	89-333-265-080		C-TR,2SC3326A	C216	87-012-156-080		C-CAP,S 220P-50 CH
	89-110-372-080		C-TR,2SA1037K(R)	C217	87-012-156-080		C-CAP,S 220P-50 CH
	89-324-122-080		C-TR,2SC2412KR	C218	87-010-182-080		C-CAP,S 2200P-50 B
	89-341-165-080		C-TR,2SC4116GR	C219	87-010-182-080		C-CAP,S 2200P-50 B
	89-115-865-080		C-TR,2SA1586G	C220	87-010-182-080		C-CAP,S 2200P-50 B
	87-A30-224-010		TR,2SA1329Y	C221	87-010-182-080		C-CAP,S 2200P-50 B
	87-026-267-080		C-TR,RN2407	C222	87-012-156-080		C-CAP,S 220P-50 CH
DIODE				C223	87-012-156-080		C-CAP,S 220P-50 CH
	87-XM1-603-080		C-DIODE,1SS193	C224	87-012-368-080		C-CAP,S 0.1-50 F
	87-001-142-080		DIODE,1SS294	C225	87-010-401-040		CAP,E 1-50 SME
MAIN C.B				C226	87-010-401-040		CAP,E 1-50 SME
C101	87-012-368-080		C-CAP,S 0.1-50 F	C227	87-010-112-040		CAP,E 100-16
C102	87-012-368-080		C-CAP,S 0.1-50 F	C228	87-010-112-040		CAP,E 100-16
C103	87-012-368-080		C-CAP,S 0.1-50 F	C229	87-012-368-080		C-CAP,S 0.1-50 F
C104	87-012-368-080		C-CAP,S 0.1-50 F	C230	87-012-368-080		C-CAP,S 0.1-50 F
C105	87-012-368-080		C-CAP,S 0.1-50 F	C231	87-010-384-040		CAP,E 100-25 SME
C106	87-010-401-040		CAP,E 1-50 SME	C232	87-010-382-040		CAP,E 22-25 SME
C107	87-012-368-080		C-CAP,S 0.1-50 F	C233	87-012-368-080		C-CAP,S 0.1-50 F
C108	87-012-368-080		C-CAP,S 0.1-50 F	C234	87-012-368-080		C-CAP,S 0.1-50 F
C109	87-012-368-080		C-CAP,S 0.1-50 F	C235	87-010-182-080		C-CAP,S 2200P-50 B
C110	87-012-368-080		C-CAP,S 0.1-50 F	C236	87-010-182-080		C-CAP,S 2200P-50 B
C113	87-012-368-080		C-CAP,S 0.1-50 F	C237	87-010-322-080		C-CAP,S 100P-50 CH
C114	87-012-368-080		C-CAP,S 0.1-50 F	C238	87-010-322-080		C-CAP,S 100P-50 CH
C115	87-012-368-080		C-CAP,S 0.1-50 F	C239	87-012-145-080		C-CAP,S 270P-50 J CH GRM
C116	87-012-368-080		C-CAP,S 0.1-50 F	C241	87-012-368-080		C-CAP,S 0.1-50 F
C117	87-012-368-080		C-CAP,S 0.1-50 F	C246	87-010-378-040		CAP,E 10-16
C118	87-012-368-080		C-CAP,S 0.1-50 F	C247	87-010-378-040		CAP,E 10-16
C119	87-012-154-080		C-CAP,S 150P-50 J CH GRM	C250	87-010-112-040		CAP,E 100-16
C120	87-012-368-080		C-CAP,S 0.1-50 F	C251	87-010-112-040		CAP,E 100-16
C121	87-012-368-080		C-CAP,S 0.1-50 F	C252	87-010-112-040		CAP,E 100-16
C122	87-010-154-080		CAP CHIP,10P	C253	87-010-112-040		CAP,E 100-16
C123	87-010-154-080		CAP CHIP,10P	C401	87-012-368-080		C-CAP,S 0.1-50 F
C124	87-010-831-080		C-CAP,U,0.1-16F	C402	87-012-368-080		C-CAP,S 0.1-50 F
C125	87-010-831-080		C-CAP,U,0.1-16F	C403	87-010-552-040		CAP,E 22-16 GAS
C126	87-010-831-080		C-CAP,U,0.1-16F	C407	87-012-368-080		C-CAP,S 0.1-50 F
C127	87-012-368-080		C-CAP,S 0.1-50 F	C451	87-012-368-080		C-CAP,S 0.1-50 F
C128	87-012-368-080		C-CAP,S 0.1-50 F	C452	87-012-368-080		C-CAP,S 0.1-50 F
C129	87-012-368-080		C-CAP,S 0.1-50 F	C453	87-010-552-040		CAP,E 22-16 GAS
C130	87-012-368-080		C-CAP,S 0.1-50 F	C454	87-010-805-080		CAP,S 1-16
C131	87-012-368-080		C-CAP,S 0.1-50 F	C455	87-010-805-080		CAP,S 1-16
				C456	87-010-552-040		CAP,E 22-16 GAS
				C457	87-012-368-080		C-CAP,S 0.1-50 F
				C966	87-010-196-080		CHIP CAPACITOR,0.1-25
				C967	87-010-197-080		CAP,CHIP 0.01 DM
				C968	87-010-197-080		CAP,CHIP 0.01 DM
				C971	87-010-178-080		C-CAP,S 1000P-50 KB
				C972	87-010-196-080		CHIP CAPACITOR,0.1-25

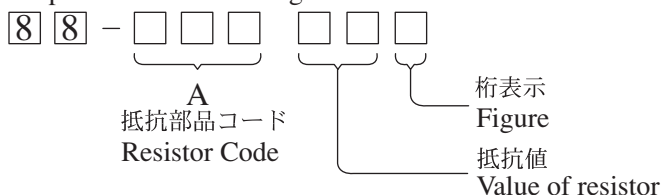
REF. NO.	PART NO.	KANRI NO.	DESCRIPTION	REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C974	87-010-322-080		C-CAP,S 100P-50 CH	R401	87-022-604-080		RES,M/F 0.1-1W J
C976	87-010-196-080		CHIP CAPACITOR,0.1-25	R402	87-A00-420-080		C-RES,S 100K-1/10W B
C977	87-010-196-080		CHIP CAPACITOR,0.1-25	R403	87-022-356-080		C-RES,S 12K-1/10W F
C978	87-010-196-080		CHIP CAPACITOR,0.1-25	R404	87-A00-420-080		C-RES,S 100K-1/10W B
C984	87-012-274-080		C-CAP,U 1000P-50 KB	R405	87-A00-420-080		C-RES,S 100K-1/10W B
C985	87-010-178-080		C-CAP,S 1000P-50 KB	R406	87-A00-420-080		C-RES,S 100K-1/10W B
C986	87-010-178-080		C-CAP,S 1000P-50 KB	R445	87-A00-420-080		C-RES,S 100K-1/10W B
C991	87-012-195-080		C-CAP,U 100P-50 J CH	R451	87-022-604-010		RES,M/F 0.1-1W J
C992	87-012-191-080		C-CAP,U 68P-50 J CH	R452	87-A00-420-080		C-RES,S 100K-1/10W B
C995	87-010-196-080		CHIP CAPACITOR,0.1-25	R453	87-022-356-080		C-RES,S 12K-1/10W F
C996	87-010-196-080		CHIP CAPACITOR,0.1-25	R454	87-A00-420-080		C-RES,S 100K-1/10W B
C997	87-A11-517-080		C-CAP,S 820P-50 K CG	R456	87-A00-420-080		C-RES,S 100K-1/10W B
C998	87-010-196-080		CHIP CAPACITOR,0.1-25	R467	87-022-607-080		RES,M/F 0.47-1W J
C999	87-010-196-080		CHIP CAPACITOR,0.1-25	R468	87-A00-420-080		C-RES,S 100K-1/10W B
C1000	87-010-193-080		C-CAP,S 0.033-25 ZF	R469	87-022-355-080		C-RES,S 10K-1/10W F
C1001	87-012-157-080		C-CAP,S 330P-50 J CH	R470	87-A00-420-080		C-RES,S 100K-1/10W B
C1002	87-012-157-080		C-CAP,S 330P-50 J CH	R471	87-A00-420-080		C-RES,S 100K-1/10W B
C1003	87-012-157-080		C-CAP,S 330P-50 J CH	R472	87-A00-420-080		C-RES,S 100K-1/10W B
C1004	87-012-153-080		C-CAP,S 120P-50 J CH	R932	83-XM1-617-080		C-COIL,BK2125HM601
C1005	87-012-153-080		C-CAP,S 120P-50 J CH	R941	87-A91-667-080		C-F-BEAD,U BLM11B102S
C1006	87-018-125-080		CAP,TC U 330P-50 K	R942	87-A91-667-080		C-F-BEAD,U BLM11B102S
C1007	87-018-125-080		CAP,TC U 330P-50 K	R949	87-A91-667-080		C-F-BEAD,U BLM11B102S
C1008	87-018-120-080		CAP,TC U 120P-50 K	R972	87-A91-667-080		C-F-BEAD,U BLM11B102S
C1009	87-010-498-040		CAP,E 10-16 M 5L SRE	R973	87-A91-667-080		C-F-BEAD,U BLM11B102S
C1010	87-010-498-040		CAP,E 10-16 M 5L SRE	R1000	87-022-607-080		RES,M/F 0.47-1W J
C1011	87-010-322-080		C-CAP,S 100P-50 J CH	X101	8A-AJ1-619-080		VIB,XTAL 33MHZ AT-49
CN101	87-A60-458-010		CONN,40P V IMSA-9031B	X102	87-A70-236-040		C-VIB,XTAL 33.8688MHZ DSO751SA
CN102	87-009-034-010		CONN,6P PH V				
CN103	87-009-035-010		CONN,7P PH M				
CN151	87-009-034-010		CONN,6P PH V				
CN201	87-009-038-010		CONN,10P PH				
CN202	87-009-038-010		CONN,10P PH				
CN451	8A-AJ1-637-010		CONN ASSY,4P 240MM-PWLMT	C301	87-010-196-080		CHIP CAPACITOR,0.1-25
CN452	87-A60-457-010		CONN,4P V TID-X	C302	87-010-196-080		CHIP CAPACITOR,0.1-25
CN999	87-009-031-010		CONN,3P	C303	87-010-553-040		CAP,E 47-16 GAS
CNA101	8A-AJ1-632-010		CONN ASSY,40P 140MM-IDE	C304	87-010-196-080		CHIP CAPACITOR,0.1-25
CNA103	8A-AJ1-633-010		CONN ASSY,7P 270MM-PWM	C305	87-010-498-040		CAP,E 10-16 GAS
CNA452	8A-AJ1-631-010		CONN ASSY,4P 270MM-PD	C306	87-010-498-040		CAP,E 10-16 GAS
JR201	87-A91-685-080		C-F-BEAD,BLM11B121SB	C307	87-010-196-080		CHIP CAPACITOR,0.1-25
L102	83-XM1-617-080		C-COIL,BK2125HM601	C308	87-010-196-080		CHIP CAPACITOR,0.1-25
L103	83-XM1-617-080		C-COIL,BK2125HM601	C801	87-010-196-080		CHIP CAPACITOR,0.1-25
L105	87-A91-502-080		C-F-BEAD,BLM11B750SA	C802	87-010-553-040		CAP,E 47-16 GAS
L106	83-XM1-617-080		C-COIL,BK2125HM601	C803	87-010-178-080		CHIP CAP,1000P
L107	83-XM1-617-080		C-COIL,BK2125HM601	C804	87-010-498-040		CAP,E 10-16 GAS
L108	83-XM1-617-080		C-COIL,BK2125HM601	C806	87-010-196-080		CHIP CAPACITOR,0.1-25
L112	83-XM1-617-080		C-COIL,BK2125HM601	C807	87-010-197-080		CAP,CHIP 0.01 DM
L113	83-XM1-617-080		C-COIL,BK2125HM601	CN301	88-803-101-290		CONN ASSY,10P
L114	83-XM1-617-080		C-COIL,BK2125HM601	CN801	8A-AJ1-634-010		CONN ASSY,4P 400MM-PWFR
L115	83-XM1-617-080		C-COIL,BK2125HM601	CN802	88-803-061-690		CONN ASSY,6P
L116	83-XM1-617-080		C-COIL,BK2125HM601	FL801	8A-AJ1-615-010		FL,BJ725GNK
L117	83-XM1-617-080		C-COIL,BK2125HM601	LED801	87-A40-228-040		LED,SLR-342MG T31 GREEN
L118	83-XM1-617-080		C-COIL,BK2125HM601	LED802	87-A40-228-040		LED,SLR-342MG T31 GREEN
L120	83-XM1-617-080		C-COIL,BK2125HM601	LED803	87-017-733-080		LED,SEL1250SMT5 RED
L121	87-A50-190-080		C-COIL,S BLM21A102S	LED804	87-A40-228-040		LED,SLR-342MG T31 GREEN
L122	87-A50-190-080		C-COIL,S BLM21A102S	R301	87-022-355-080		C-RES,S 10K-1/10W F
L123	83-XM1-617-080		C-COIL,BK2125HM601	R302	87-022-355-080		C-RES,S 10K-1/10W F
L125	83-XM1-617-080		C-COIL,BK2125HM601	R303	87-022-355-080		C-RES,S 10K-1/10W F
L126	83-XM1-617-080		C-COIL,BK2125HM601	R304	87-022-525-080		C-RES,S 20K-1/10W F
L201	87-005-780-080		C-COIL,10UH FLC32C	R305	87-022-355-080		C-RES,S 10K-1/10W F
L202	87-005-780-080		C-COIL,10UH FLC32C	R306	87-022-355-080		C-RES,S 10K-1/10W F
L203	87-005-799-080		C-COIL,1UH FLC32	R307	87-022-355-080		C-RES,S 10K-1/10W F
L204	87-005-799-080		C-COIL,1UH FLC32	R308	87-022-525-080		C-RES,S 20K-1/10W F
L997	83-XM1-617-080		C-COIL,BK2125HM601	R309	87-022-355-080		C-RES,S 10K-1/10W F
L998	83-XM1-617-080		C-COIL,BK2125HM601	R310	87-A00-523-080		C-RES,S 8.25K-1/10W F
L999	83-XM1-617-080		C-COIL,BK2125HM601	S801	87-036-397-080		SW,TACT SKQNAB
PR201	87-A91-153-080		FUSE,630MA 125V 251	S802	87-036-397-080		SW,TACT SKQNAB
R150	87-010-178-080		C-CAP,S 1000P-50 KB	S803	87-036-397-080		SW,TACT SKQNAB
R202	87-010-322-080		C-CAP,S 100P-50 J CH	S804	87-036-397-080		SW,TACT SKQNAB
R210	83-XM1-617-080		C-COIL,BK2125HM601	S805	87-036-397-080		SW,TACT SKQNAB
R260	87-A50-190-080		C-COIL,S BLM21A102S	S806	87-036-397-080		SW,TACT SKQNAB
				S807	87-036-397-080		SW,TACT SKQNAB
				S808	87-036-397-080		SW,TACT SKQNAB

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION	REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
S809	87-036-397-080		SW,TACT SKQNAB	HPJ	C.B		
S810	87-036-397-080		SW,TACT SKQNAB				
S811	87-036-397-080		SW,TACT SKQNAB	C503	87-010-196-080		CHIP CAPACITOR,0.1-25
S812	87-036-397-080		SW,TACT SKQNAB	CN501	88-805-031-290		CONN ASSY,3P
S813	87-A91-451-010		SW,SL 1-1-3 SSSF013-P06N1	J501	87-A61-102-010		JACK,6.3 BLK ST W/O SW GD JY63
				R501	83-XM1-617-080		C-COIL,BK2125HM601
VR301	87-A90-595-010		VR,RTRY 20KAX2 1 V XVO122GPVN2	R502	83-XM1-617-080		C-COIL,BK2125HM601
				R503	83-XM1-617-080		C-COIL,BK2125HM601
REAR C.B							
C701	87-012-349-080		C-CAP,S 1000P-50 CH	PWRSW	C.B		
C702	87-012-349-080		C-CAP,S 1000P-50 CH				
C703	87-010-197-080		CAP,CHIP 0.01 DM	△ C601	87-010-978-010		CAP,CER 4700P-400 KC
C704	87-010-197-080		CAP,CHIP 0.01 DM	△ CN601	87-099-674-010		CONN,2P VA V
C705	87-012-349-080		C-CAP,S 1000P-50 CH	△ CN602	87-099-674-010		CONN,2P VA V
				△ CNA602	87-AV1-624-010		CONN ASSY,2P PS
C706	87-012-349-080		C-CAP,S 1000P-50 CH	△ S601	87-A90-596-010		SW,PUSH 1-1-1 SDDLBI-B1-F-2
C707	87-012-156-080		C-CAP,S 220P-50 CH				
C708	87-010-197-080		CAP,CHIP 0.01 DM	POWER	C.B		
C710	87-010-196-080		CHIP CAPACITOR,0.1-25				
C711	87-010-196-080		CHIP CAPACITOR,0.1-25	△	8A-AJ1-614-010		POWER UNIT
C712	87-010-196-080		CHIP CAPACITOR,0.1-25				
C713	87-010-196-080		CHIP CAPACITOR,0.1-25				
C714	87-010-196-080		CHIP CAPACITOR,0.1-25				
CN701	88-805-102-290		CONN ASSY,10P				
J701	87-A61-103-010		JACK,PIN 4P BLK W/O SW RJ1073				
J703	87-A60-573-010		JACK,PIN 1P ORN				

チップ抵抗部品コード／CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち

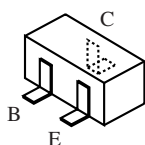
Chip Resistor Part Coding



チップ抵抗 Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法／Dimensions (mm)				抵抗コード : A Resistor Code : A
				外形／Form	L	W	t	
1/16W	1005	± 5%	CJ		1.0	0.5	0.35	104
1/16W	1608	± 5%	CJ		1.6	0.8	0.45	108
1/10W	2125	± 5%	CJ		2	1.25	0.45	118
1/8W	3216	± 5%	CJ		3.2	1.6	0.55	128

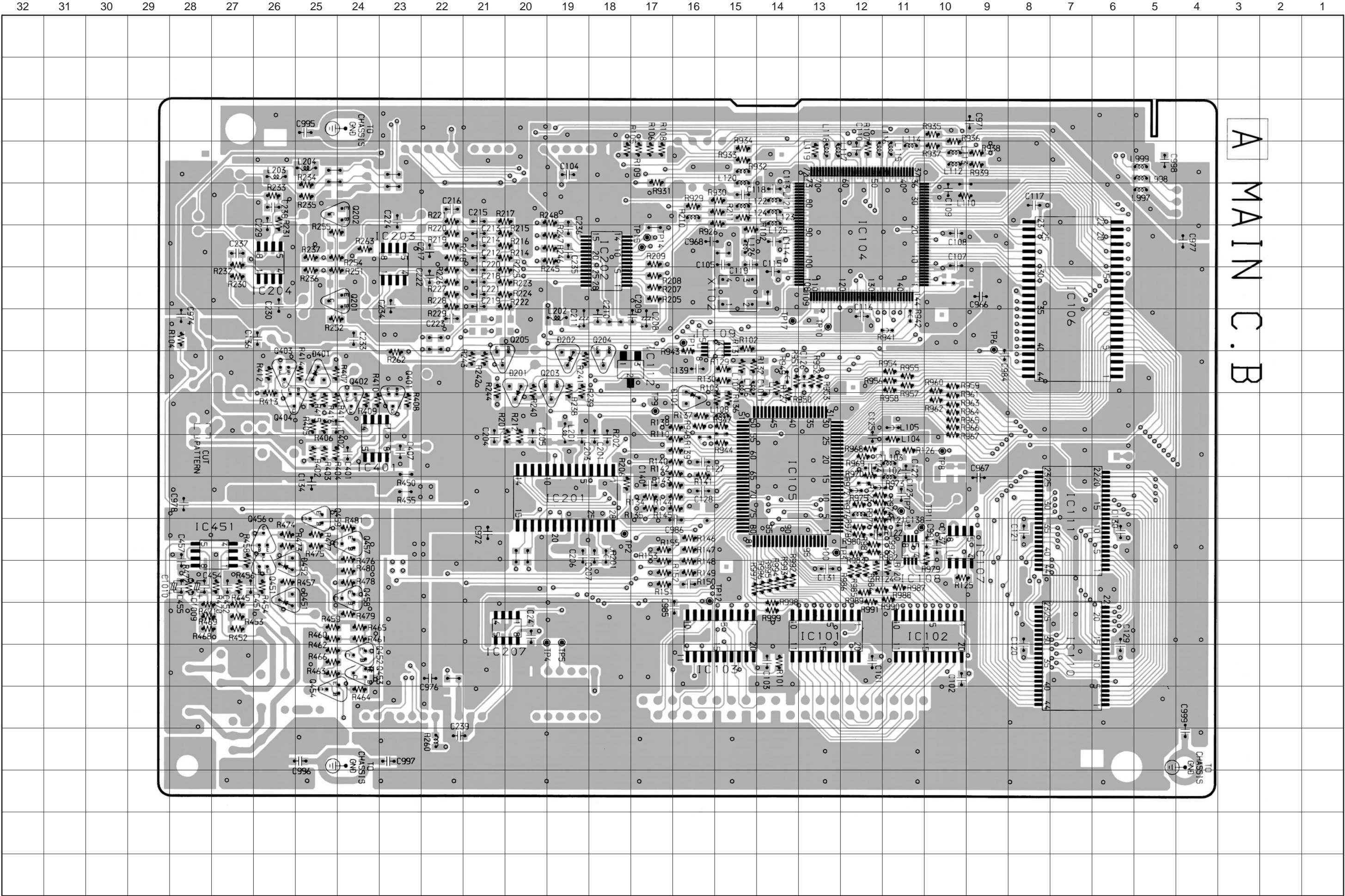
TRANSISTOR ILLUSTRATION

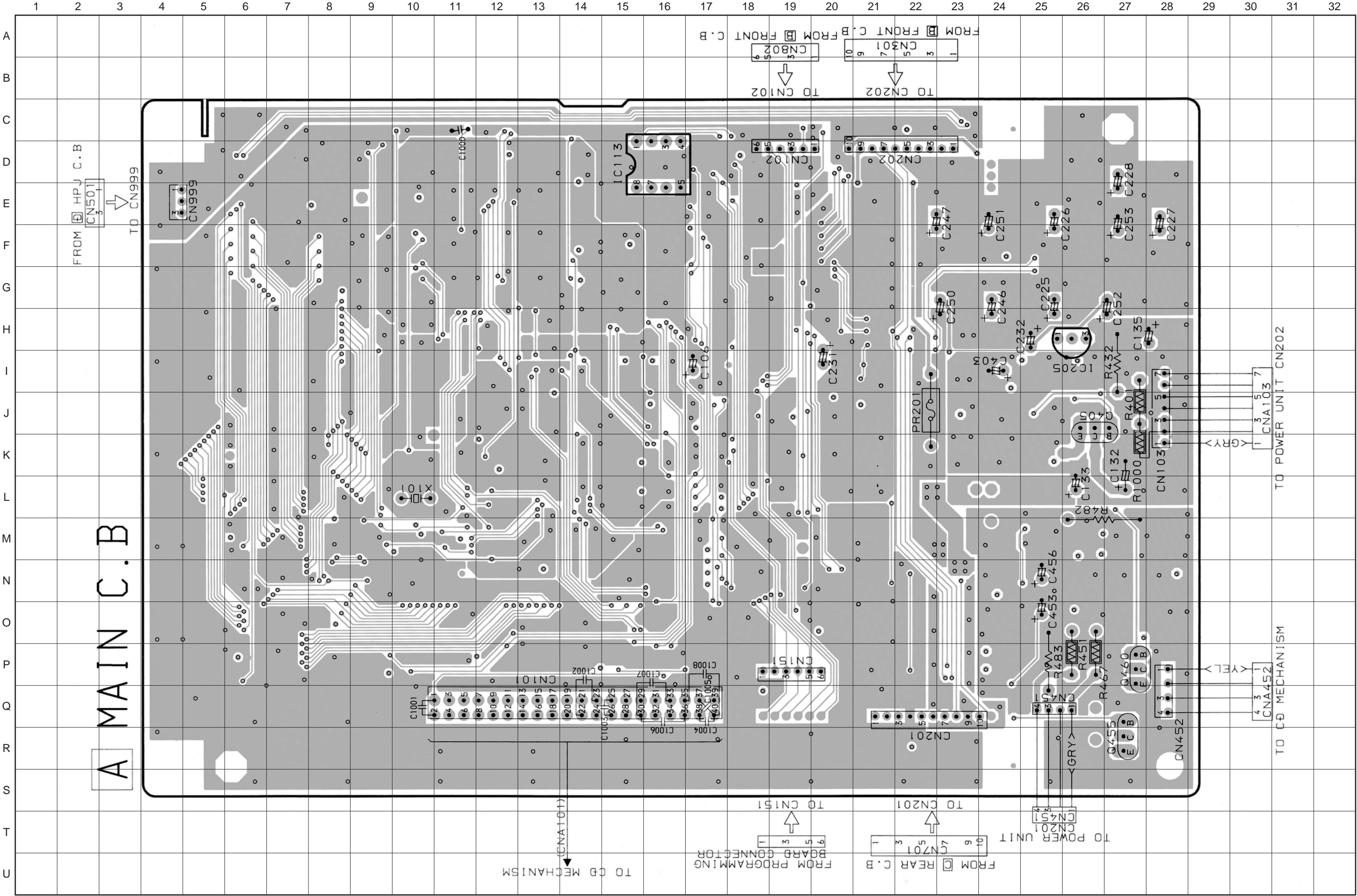


2SA1037 2SC3326
2SA1586 2SC4116
2SC2412 RN2407

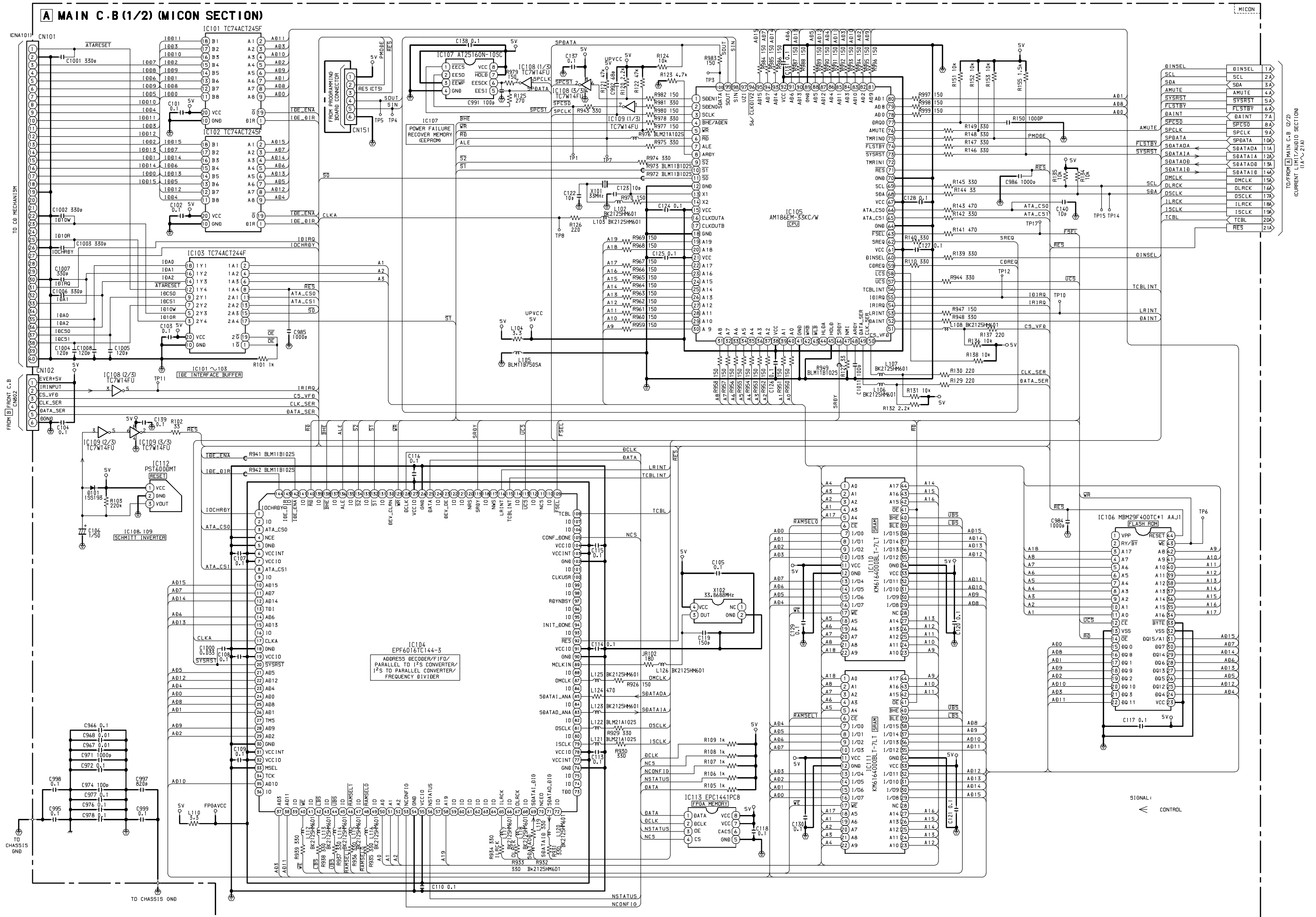


2SA1329

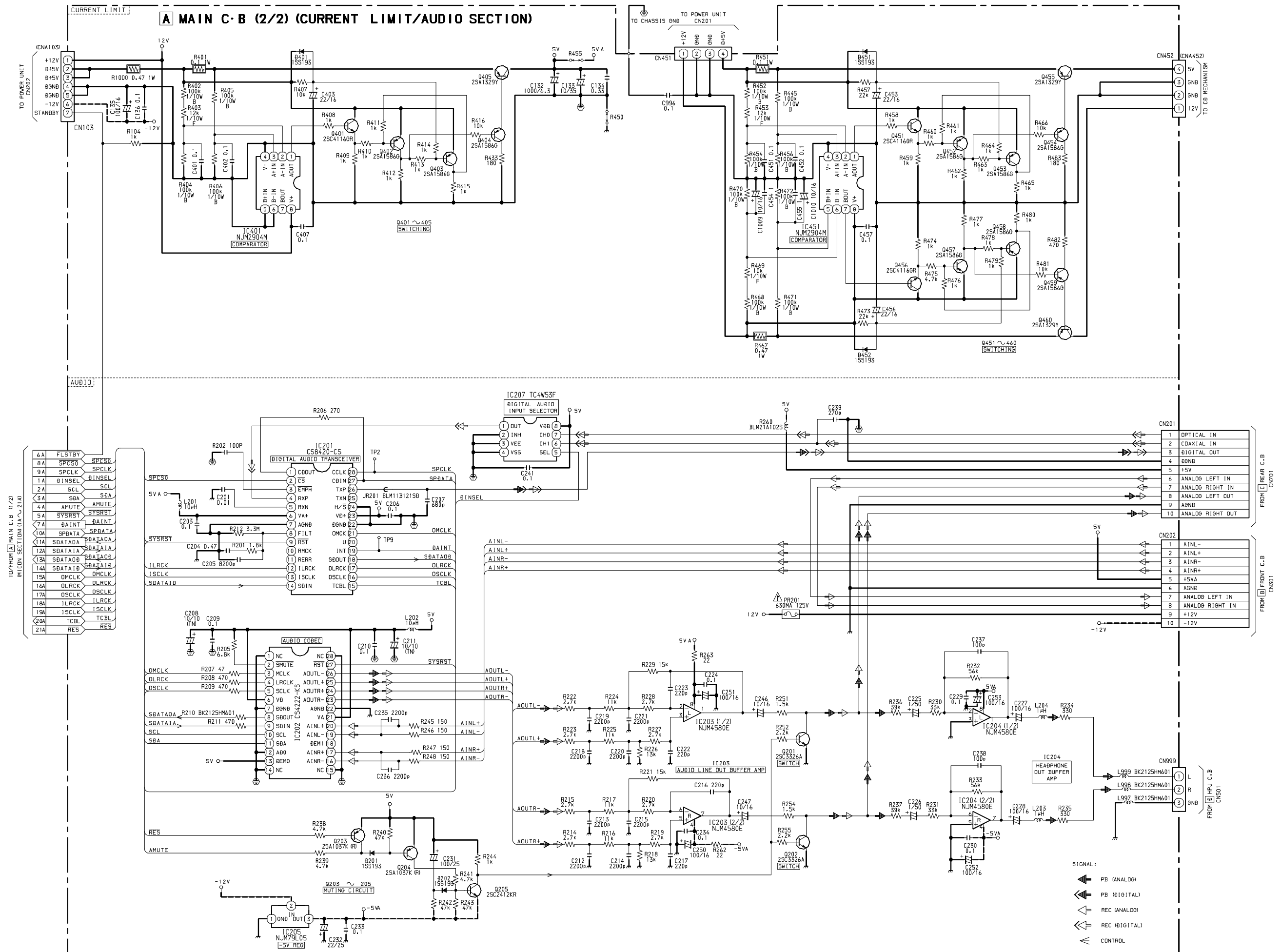




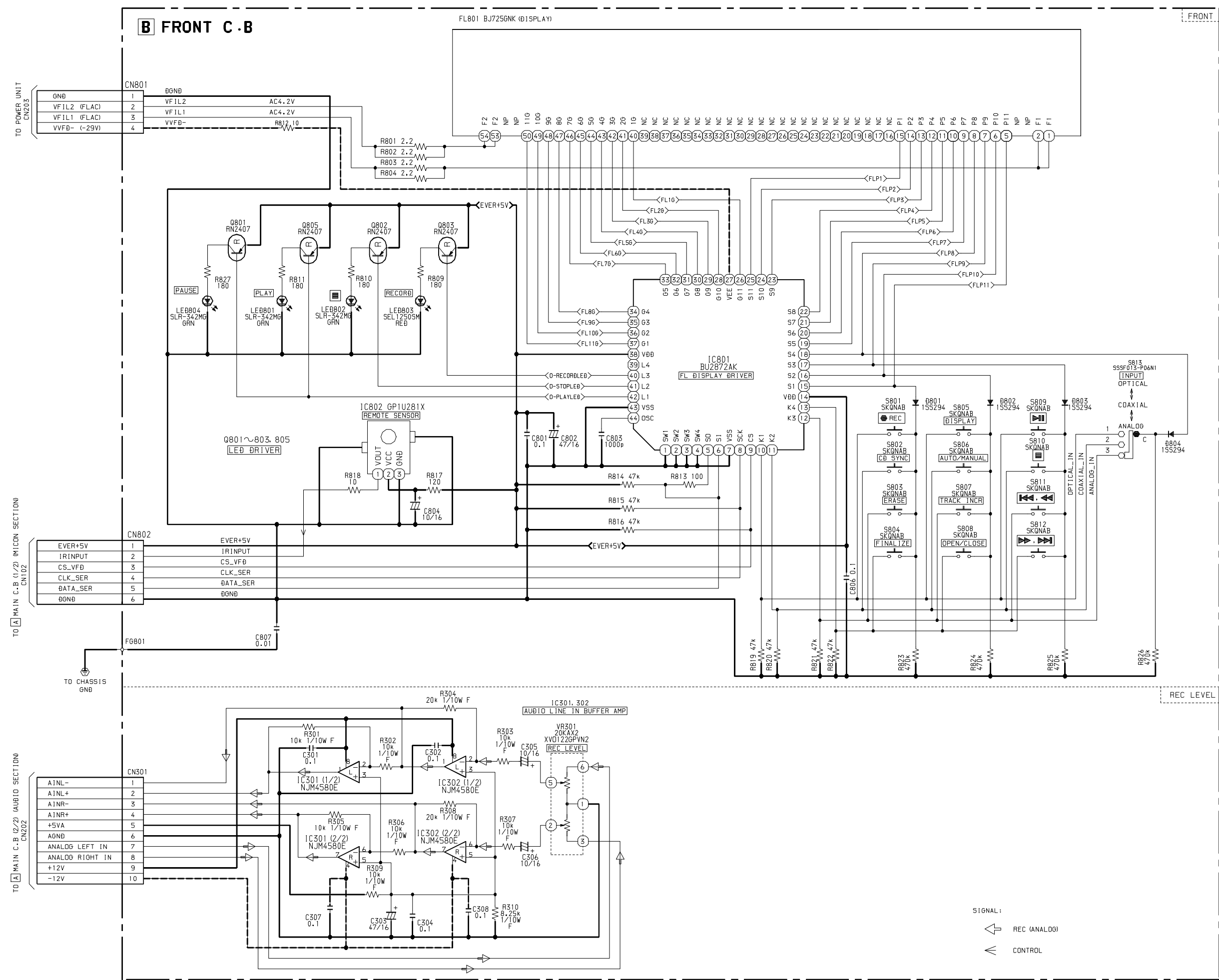
SCHEMATIC DIAGRAM – 1 (MAIN (1 / 2) : MICON SECTION)

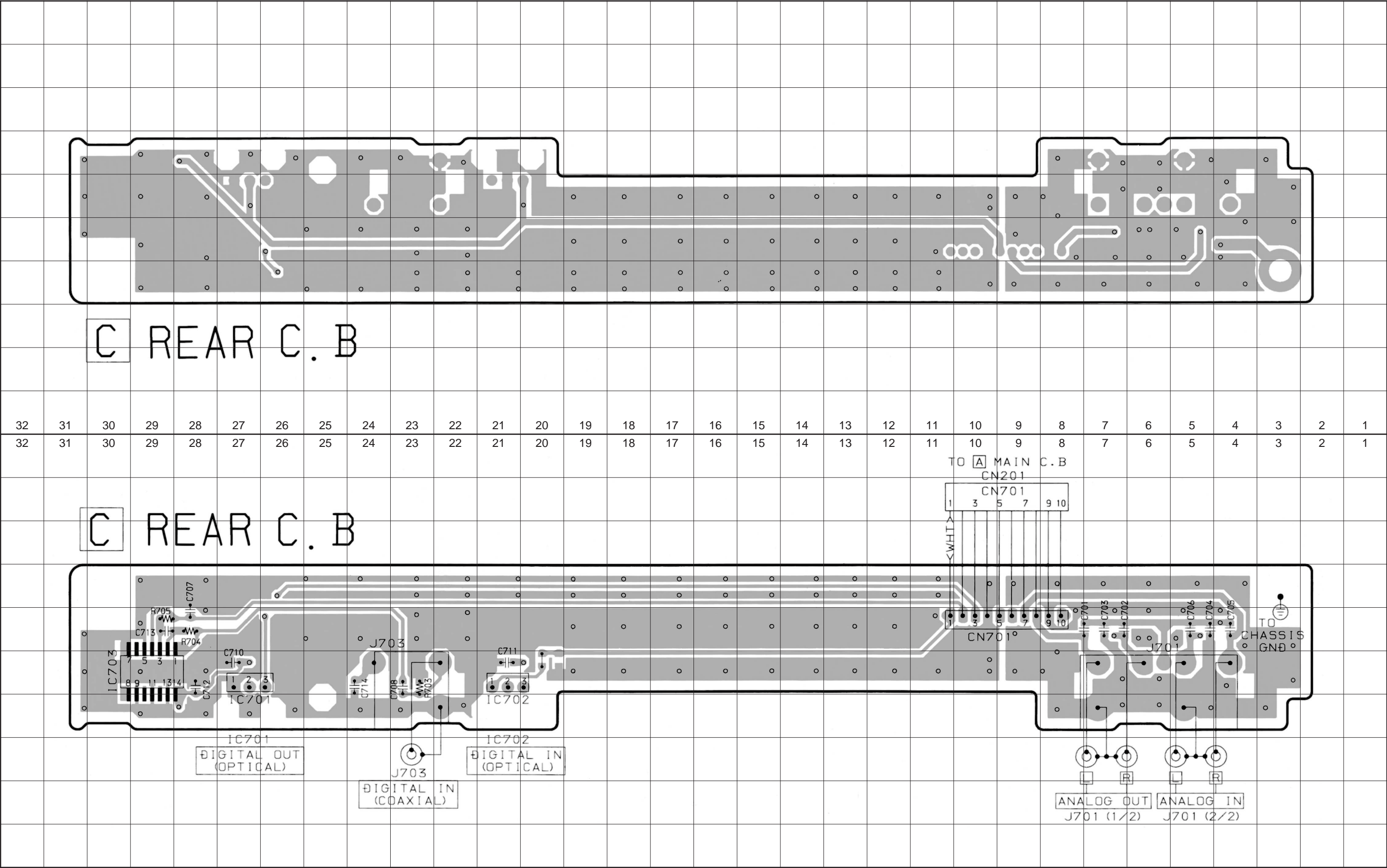


SCHEMATIC DIAGRAM – 2 (MAIN (2 / 2) : CURRENT LIMIT / AUDIO SECTION)

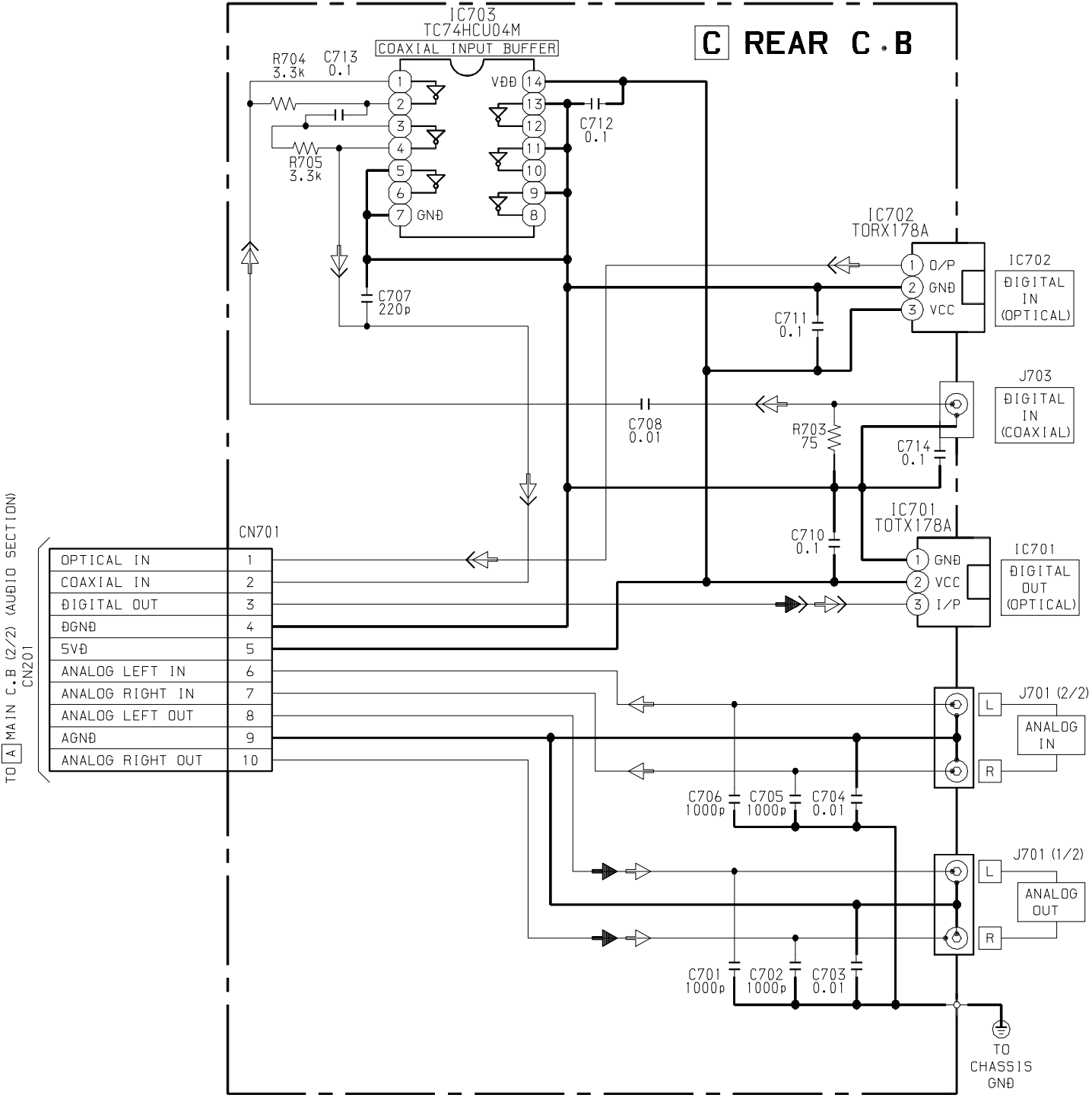


SCHEMATIC DIAGRAM – 3 (FRONT)

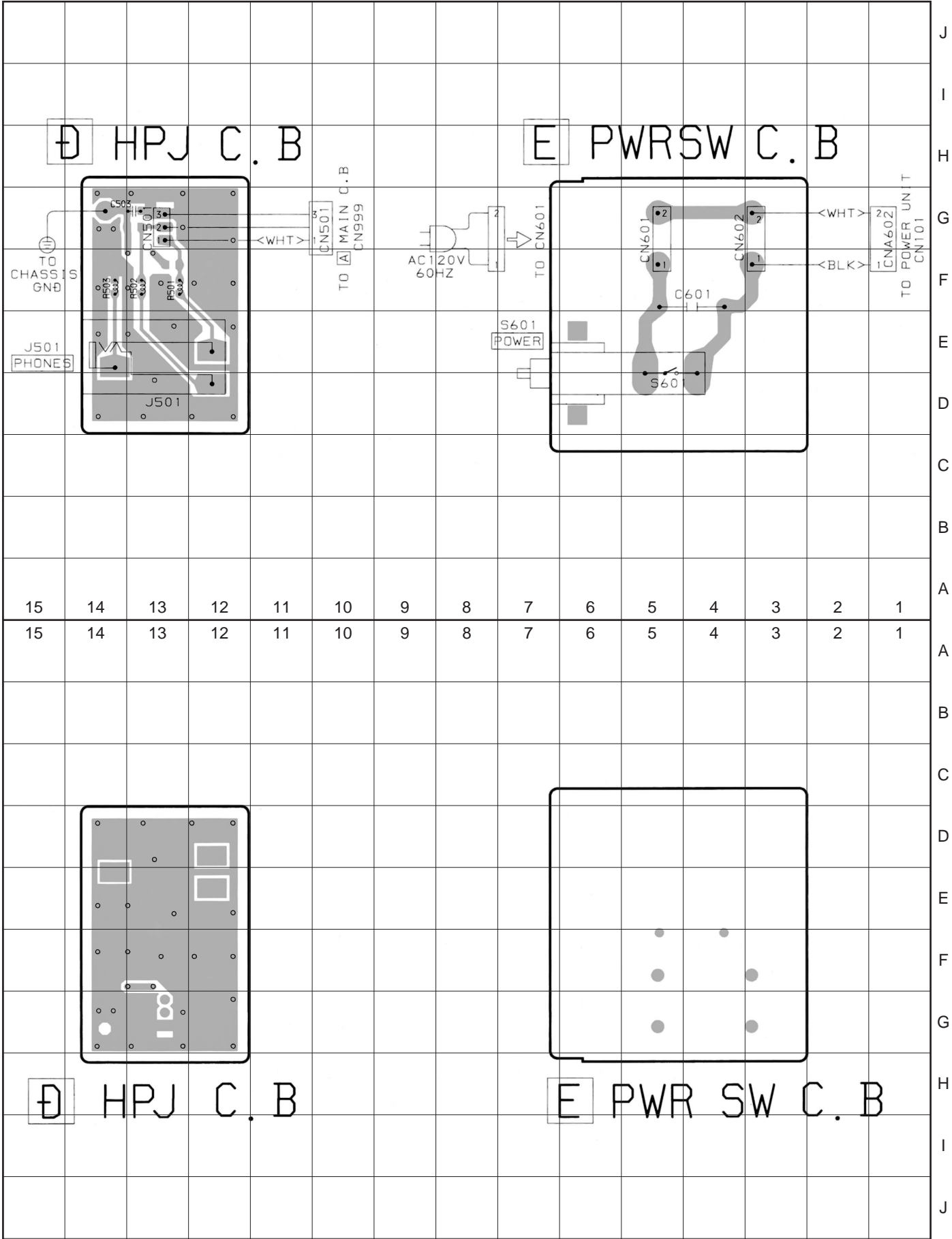




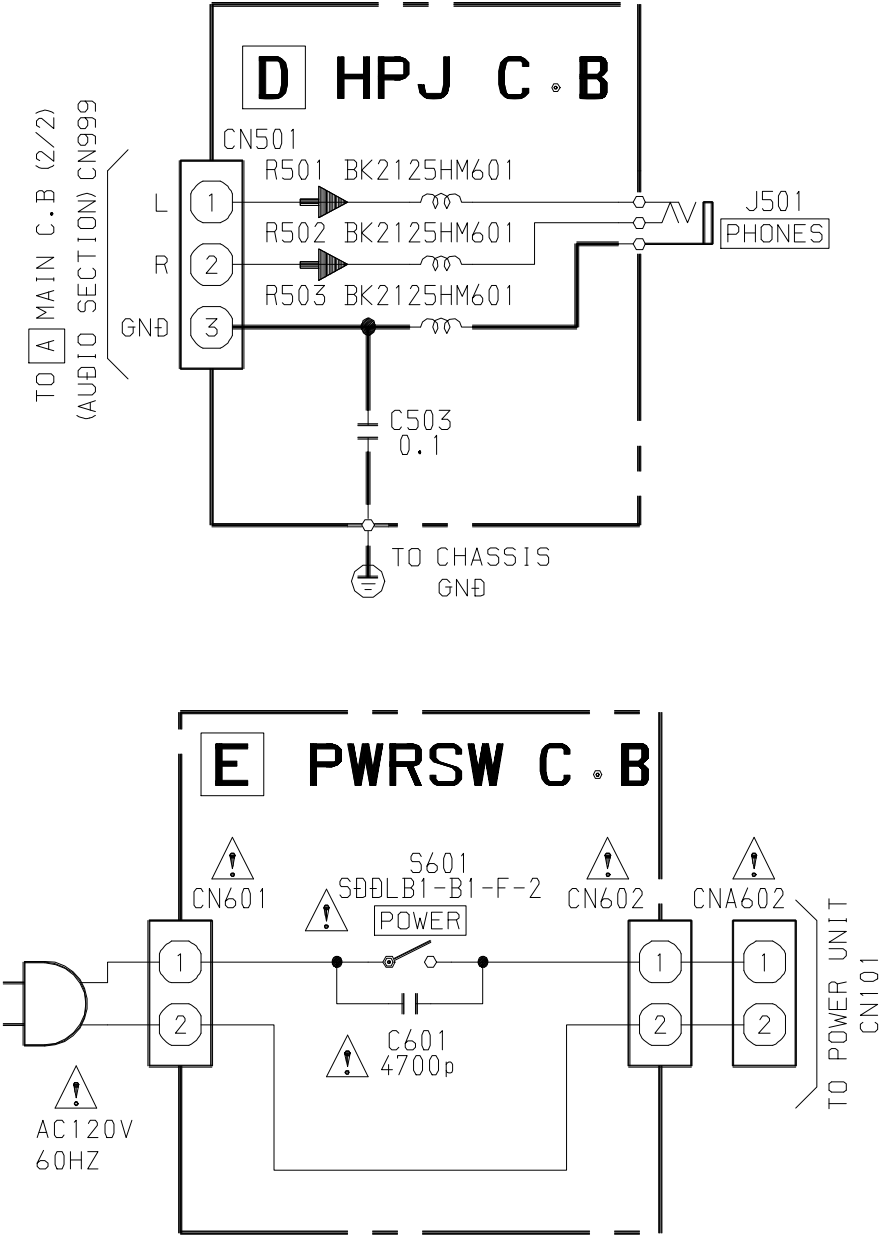
SCHEMATIC DIAGRAM – 4 (REAR)







- SIGNAL:
- PB (ANALOG)
 - PB (DIGITAL)
 - REC (ANALOG)
 - REC (DIGITAL)

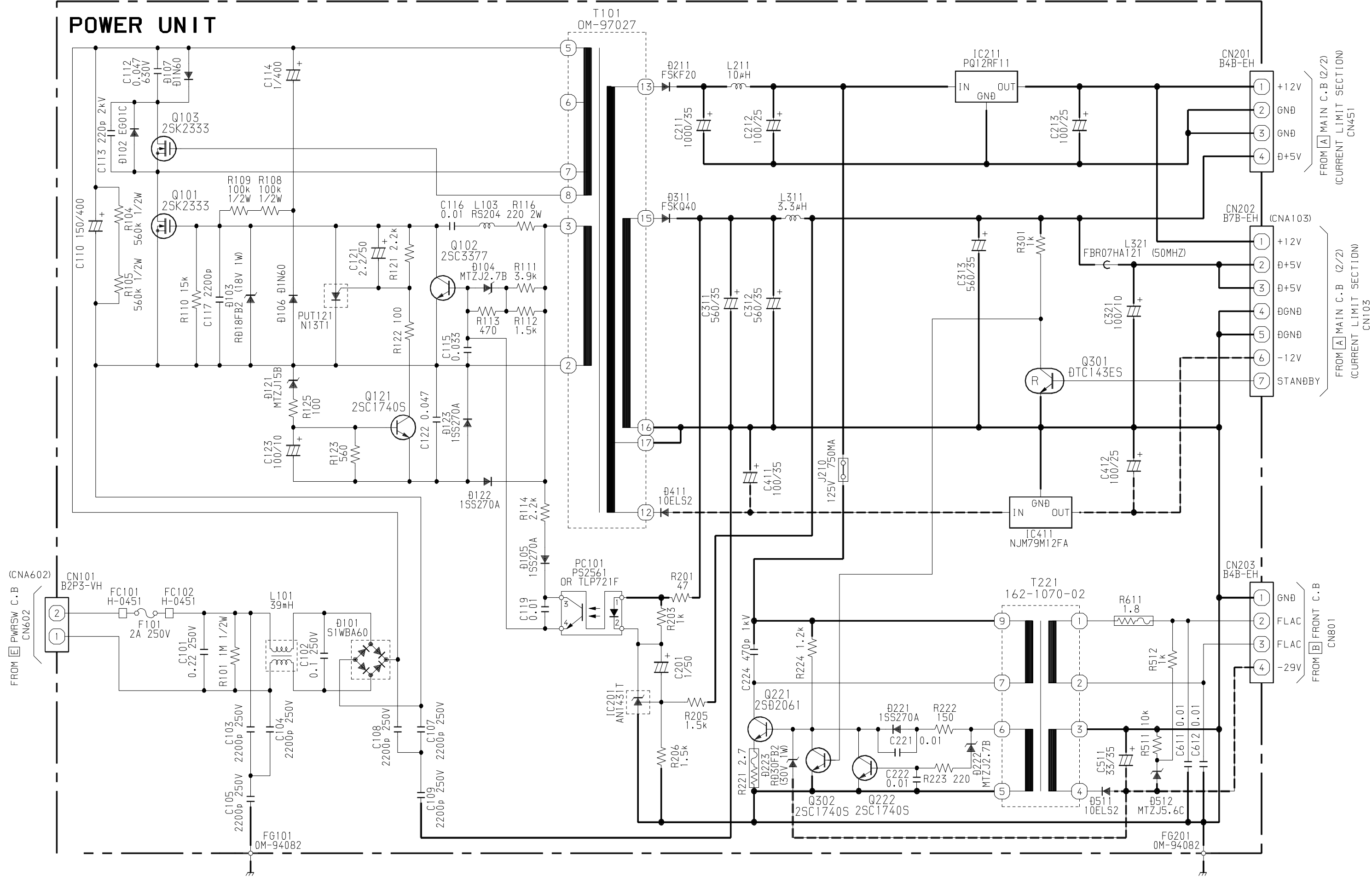


SCHEMATIC DIAGRAM – 5 (HPJ / PWRSW)



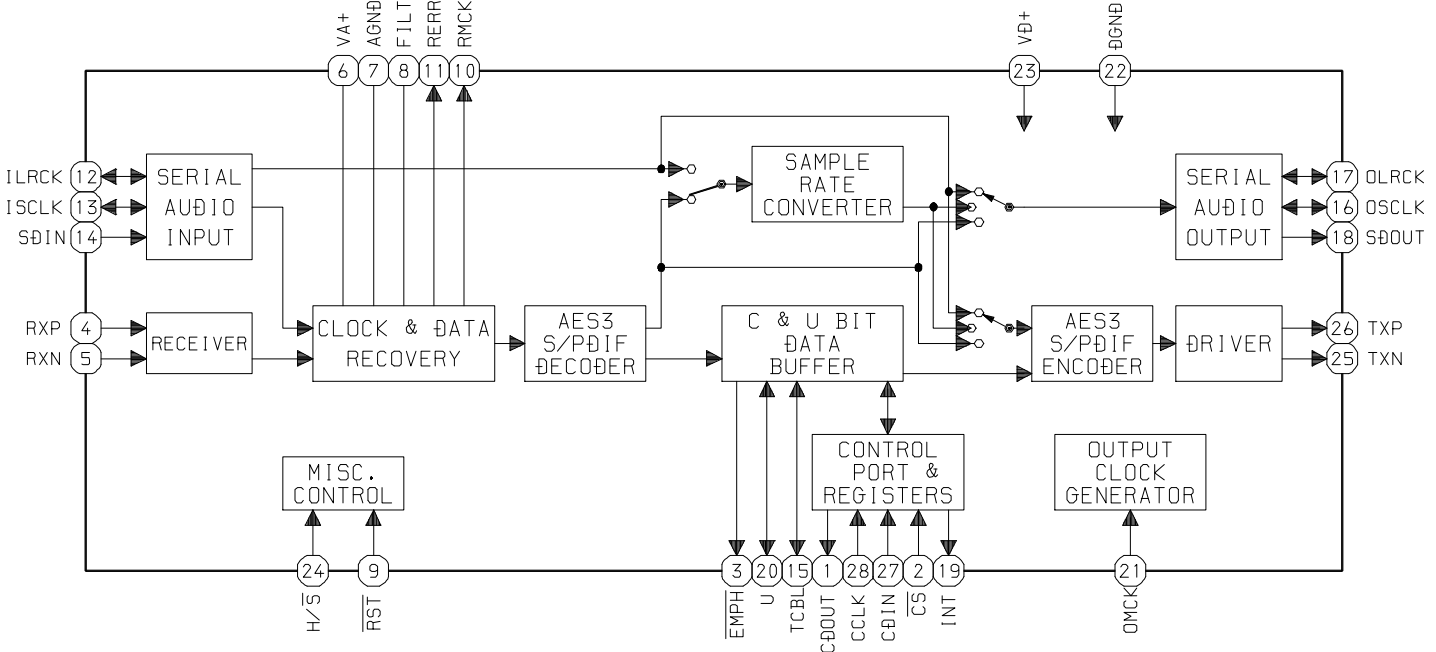
- SIGNAL:
-  PB (ANALOG)
 -  PB (DIGITAL)
 -  REC (ANALOG)
 -  REC (DIGITAL)

SCHEMATIC DIAGRAM – 6 (POWER UNIT)
Information only

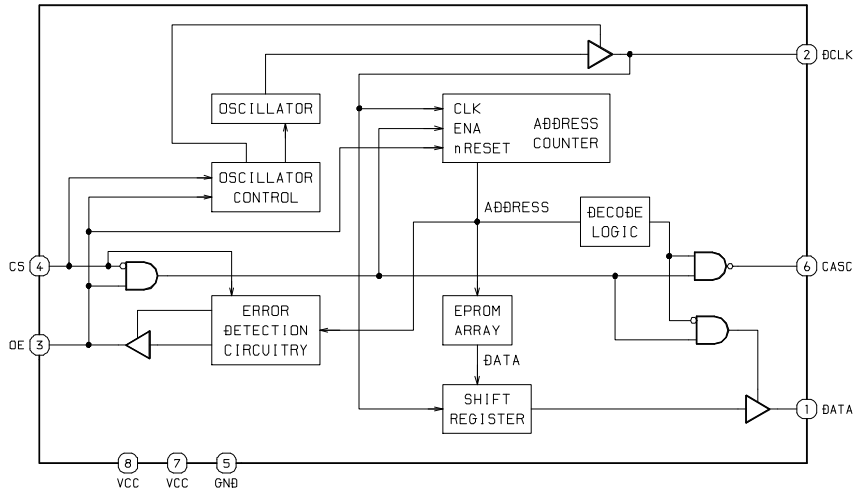


IC BLOCK DIAGRAM

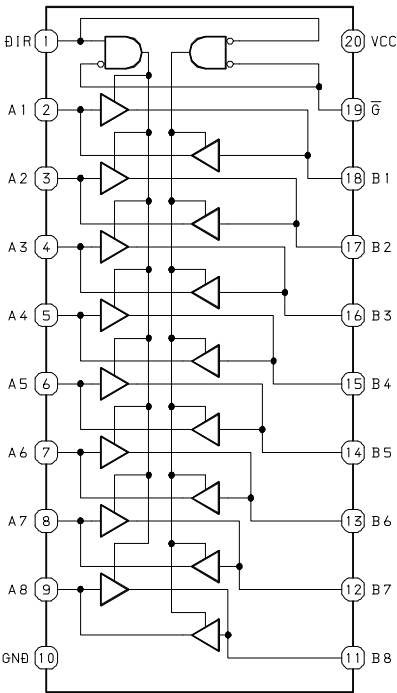
IC, CS8420-CS



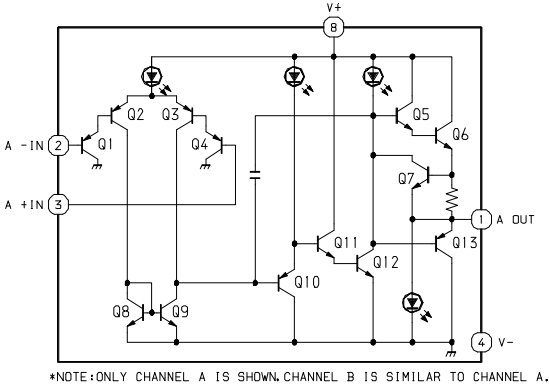
IC, EPC1441PC8



IC, TC74ACT245F



IC, NJM2904M

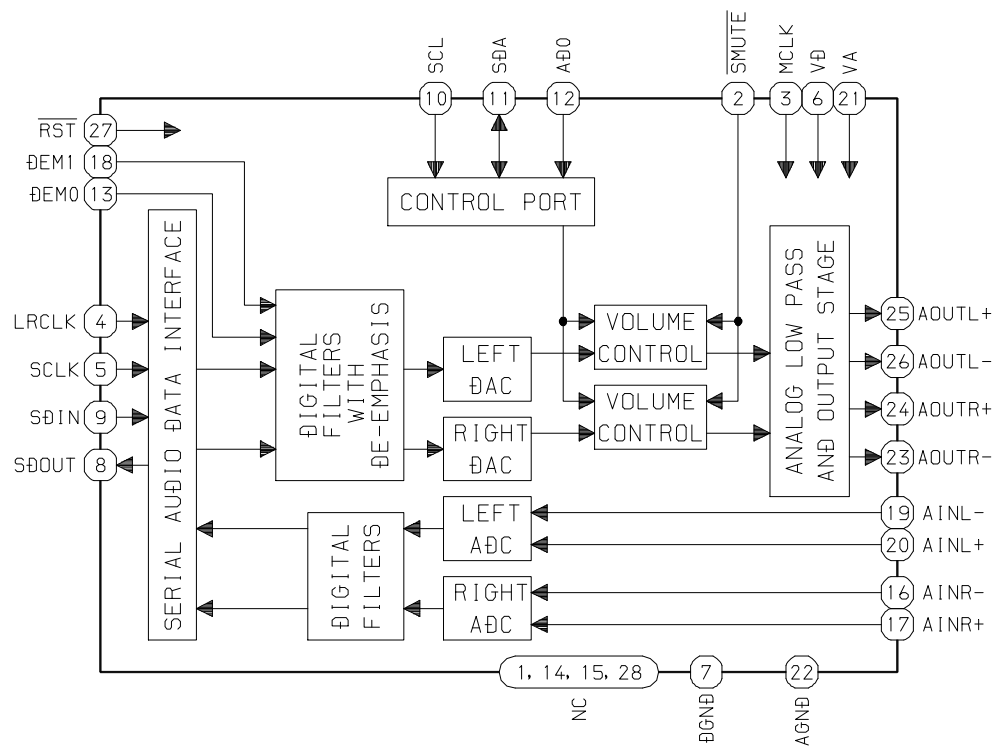


TRUTH TABLE

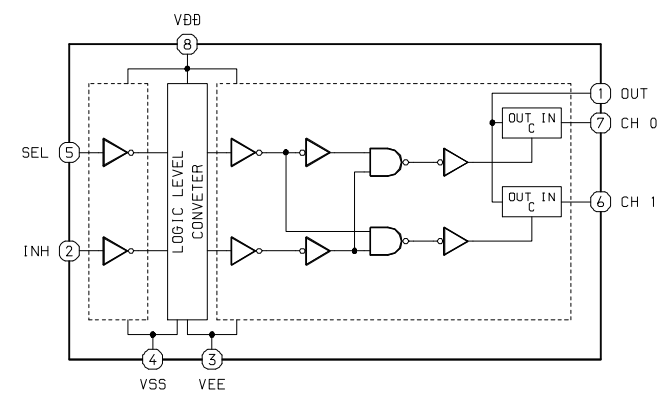
INPUTS	FUNCTION	OUTPUT
\bar{G} DIR	A-BUS	B-BUS
L L	OUTPUT	INPUT
L H	INPUT	OUTPUT
H X	HIGH IMPEDANCE	Z

X: DON'T CARE
Z: HIGH IMPEDANCE

IC, CS4222-KS



IC, TC4W53F

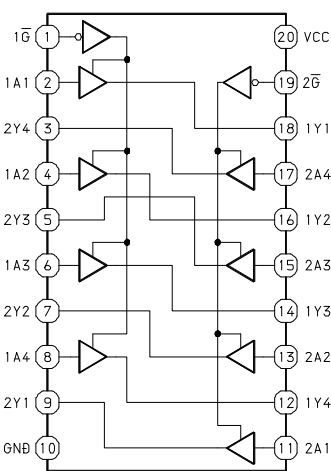


TRUTH TABLE

CONTROL INPUT		ON CHANNEL
INH	A	
L	L	CH 0
L	H	CH 1
H	*	NONE

* DON'T CARE

IC, TC74ACT244F



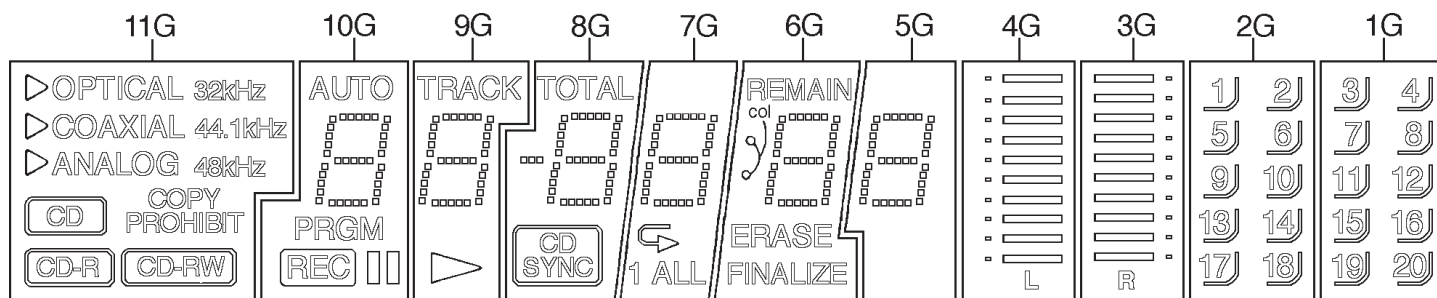
TRUTH TABLE

INPUTS		OUTPUT
\bar{G}	A_n	Y_n
L	L	L
L	H	H
H	X	Z

X: DON'T CARE
Z: HIGH IMPEDANCE

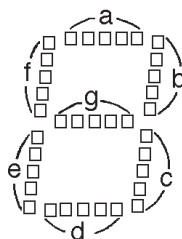
FL (BJ725GNK) GRID ASSIGNMENT / ANODE CONNECTION / PIN CONNECTION

GRID ASSIGNMENT

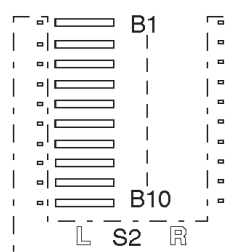


- ▷ S3
- ▷ S4
- ▷ S5

(11G)



(10G ~ 5G)



(4G, 3G)

(2G, 1G)

ANODE CONNECTION

	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1	S3	AUTO	TRACK	TOTAL	-	REMAIN	-	B1	B1	1	3
P2	S4	a	a	a	a	a	a	B2	B2	2	4
P3	S5	b	b	b	b	b	b	B3	B3	5	7
P4	32kHz	f	f	f	f	f	f	B4	B4	6	8
P5	44.1kHz	g	g	g	g	g	g	B5	B5	9	11
P6	48kHz	c	c	c	c	c	c	B6	B6	10	12
P7	OPTICAL COAXIAL ANALOG	e	e	e	e	e	e	B7	B7	13	15
P8	COPY PROHIBIT	d	d	d	d	d	d	B8	B8	14	16
P9	CD	PRGM	▶	CD SYNC	↺	ERASE	-	B9	B9	17	19
P10	CD-R	REC	-	-	ALL	FINALIZE	-	B10	B10	18	20
P11	CD-RW		-	□□□	1	col	-	S2	S2	S1	S1

PIN CONNECTION

PIN NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
CONNECTION	F1	F1	NP	NP	P11	P10	P9	P8	P7	P6	P5	P4	P3	P2	P1	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

PIN NO.	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54
CONNECTION	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	1G	2G	3G	4G	5G	6G	7G	8G	9G	10G	11G	NP	NP	F2	F2

NOTE: 1) F1,F2----- Filament
 2) NP ----- No pin
 3) NC ----- No connection
 4) 1G ~ 11G ----- Grid

IC DESCRIPTION

IC, AM186EM-33KC/W

Pin No.	Pin Name	I/O	Description
1	SDEN1	O	E ² PROM control. (Chip select)
2	SDEN0	O	Digital audio IC control. (Chip select)
3	SCLK	O	E ² PROM/Digital audio IC control. (Clock)
4	$\overline{\text{BHE/ADEN}}$	O	CPU data bus. (Bus high enable)
5	$\overline{\text{WR}}$	O	CPU data bus. (Write strobe)
6	$\overline{\text{RD}}$	O	CPU data bus. (Read strobe)
7	ALE	O	CPU data bus. (Address latch enable)
8	ARDY	–	Not used. (Connected to ground through a resistor)
9 ~ 11	$\overline{\text{S2}} \sim \overline{\text{S0}}$	O	Bus cycle status 2 ~ 0.
12	GND	–	Digital ground.
13	X1	I	CPU clock input. (33MHz)
14	X2	O	CPU clock output. (33MHz)
15	VCC	–	Digital +5V.
16	CLKOUTA	O	CPU clock buffered output. (33MHz)
17	CLKOUTB	O	Not used.
18	GND	–	Digital ground.
19 ~ 20	A19 ~ A18	O	CPU address bus. (A19 ~ A18)
21	VCC	–	Digital +5V.
22 ~ 37	A17 ~ A2	O	CPU address bus. (A17 ~ A2)
38	VCC	–	Digital +5V.
39 ~ 40	A1 ~ A0	O	CPU address bus. (A1 ~ A0)
41	GND	–	Digital ground.
42	$\overline{\text{WHB}}$	–	Not used.
43	$\overline{\text{WLB}}$	–	Not used.
44	HLDA	–	Not used.
45	HOLD	–	Not used. (Connected to ground)
46	SRDY	O	Synchronous ready.
47	NMI	–	Not used. (Connected to ground through a resistor)
48	ARDY	O	Asynchronous ready. (Connected to ground through a capacitor)
49	DATA_SER	I/O	VFD driver control. (Data)
50	CLK_SER	O	VFD driver control. (Clock)
51	CS_VFD	O	VFD driver control. (Chip select)
52	DAINT	I	Digital audio IC interrupt request.
53	IRINT	I	Left/Right channel audio I/O interrupt request.
54	IRIRQ	I	IR (Remocon) signal input.
55	IDIRQ	I	CD drive interrupt request.
56	TCBLINT	–	TCBL interrupt request.
57	$\overline{\text{UCS}}$	O	Upper memory chip select.
58	$\overline{\text{LCS}}$	O	Not used. (Connected to +5V through a resistor)
59	CDREQ	–	CD interrupt request.
60	DINSEL	O	Digital source select. (Optical/Coaxial)

Pin No.	Pin Name	I/O	Description
61	VCC	–	Digital +5V.
62	SREQ	–	Serial interrupt request.
63	$\overline{\text{FSEL}}$	O	FPGA chip select.
64	GND	–	Digital ground.
65	ATA_CS1	O	ATAPI I/F IDA2.
66	ATA_CS0	O	ATAPI I/F reset.
67	VCC	–	Digital +5V.
68	SDA	O	Audio codec control. (Data)
69	SCL	O	Audio codec control. (Clock)
70	GND	–	Digital ground.
71	$\overline{\text{RES}}$	I	CPU reset.
72	TMRIN1	–	Programming mode selector. (Not used)
73	$\overline{\text{SYSRST}}$	O	Reset FPGA, audio codec and digital audio IC.
74	$\overline{\text{FLSTBY}}$	O	VFD power standby control.
75	TMRIN0	–	Programming mode selector.
76	AMUTE	O	Mute the analog output.
77	DRQO	–	Not used.
78	AD0	I/O	CPU address/Data bus. (AD0)
79	AD8	I/O	CPU address/Data bus. (AD8)
80	AD1	I/O	CPU address/Data bus. (AD1)
81	AD9	I/O	CPU address/Data bus. (AD9)
82	AD2	I/O	CPU address/Data bus. (AD2)
83	AD10	I/O	CPU address/Data bus. (AD10)
84	AD3	I/O	CPU address/Data bus. (AD3)
85	AD11	I/O	CPU address/Data bus. (AD11)
86	AD4	I/O	CPU address/Data bus. (AD4)
87	AD12	I/O	CPU address/Data bus. (AD12)
88	AD5	I/O	CPU address/Data bus. (AD5)
89	GND	–	Digital ground.
90	AD13	I/O	CPU address/Data bus. (AD13)
91	AD6	I/O	CPU address/Data bus. (AD6)
92	VCC	–	Digital +5V.
93	AD14	I/O	CPU address/Data bus. (AD14)
94	AD7	I/O	CPU address/Data bus. (AD7)
95	AD15	I/O	CPU address/Data bus. (AD15)
96	S6/ $\overline{\text{CLKDIV2}}$	–	Not used.
97	UZI	–	Not used.
98	SIN	–	RS232C I/F data line. (Send)
99	SOUT	–	RS232C I/F data line. (Receive)
100	SDATA	I/O	E ² PROM/Digital audio IC control. (Data)

IC, EPF6016TC144–3

Pin No.	Pin Name	I/O	Description
1	IOCHRDY	I	I/O channel ready.
2	IO	–	Not used.
3	ATA_CS0	I	ATAPI CS0.
4	NCE	I	Dedicated configuration pin. For EPROM connection. (Connected to ground)
5	GND	–	Ground.
6	VCCINT	–	Power supply.
7	VCCIO	–	Power supply.
8	ATA_CS1	I	ATAPI CS1.
9	IO	–	Not used.
10	AD15	I/O	Address bus.
11	AD7	I/O	Address bus.
12	AD14	I/O	Address bus.
13	TDI	–	For JTAG connection. (Not used)
14	AD6	I/O	Address bus.
15	AD13	I/O	Address bus.
16	IO	–	Not used.
17	CLKA	I	33MHz clock.
18	GND	–	Ground.
19	VCCIO	–	Power supply.
20	$\overline{\text{SYSRST}}$	I	System reset.
21	AD5	I/O	Address bus.
22	AD12	I/O	Address bus.
23	AD4	I/O	Address bus.
24	AD0	I/O	Address bus.
25	AD8	I/O	Address bus.
26	AD1	I/O	Address bus.
27	TMS	–	For JTAG connection. (Not used)
28	AD9	I/O	Address bus.
29	AD2	I/O	Address bus.
30	GND	–	Ground.
31	VCCINT	–	Power supply.
32	VCCIO	–	Power supply.
33	MSEL	I	Dedicated configuration pin. For EPROM connection. (Connected to ground)
34	TCK	–	For JTAG connection. (Not used)
35	AD10	I/O	Address bus.
36	IO	–	Not used.
37	AD3	I/O	Address bus.
38	AD11	I/O	Address bus.
39	IO	–	Not used.
40	$\overline{\text{WE}}$	O	Write enable.
41	IO	–	Not used.

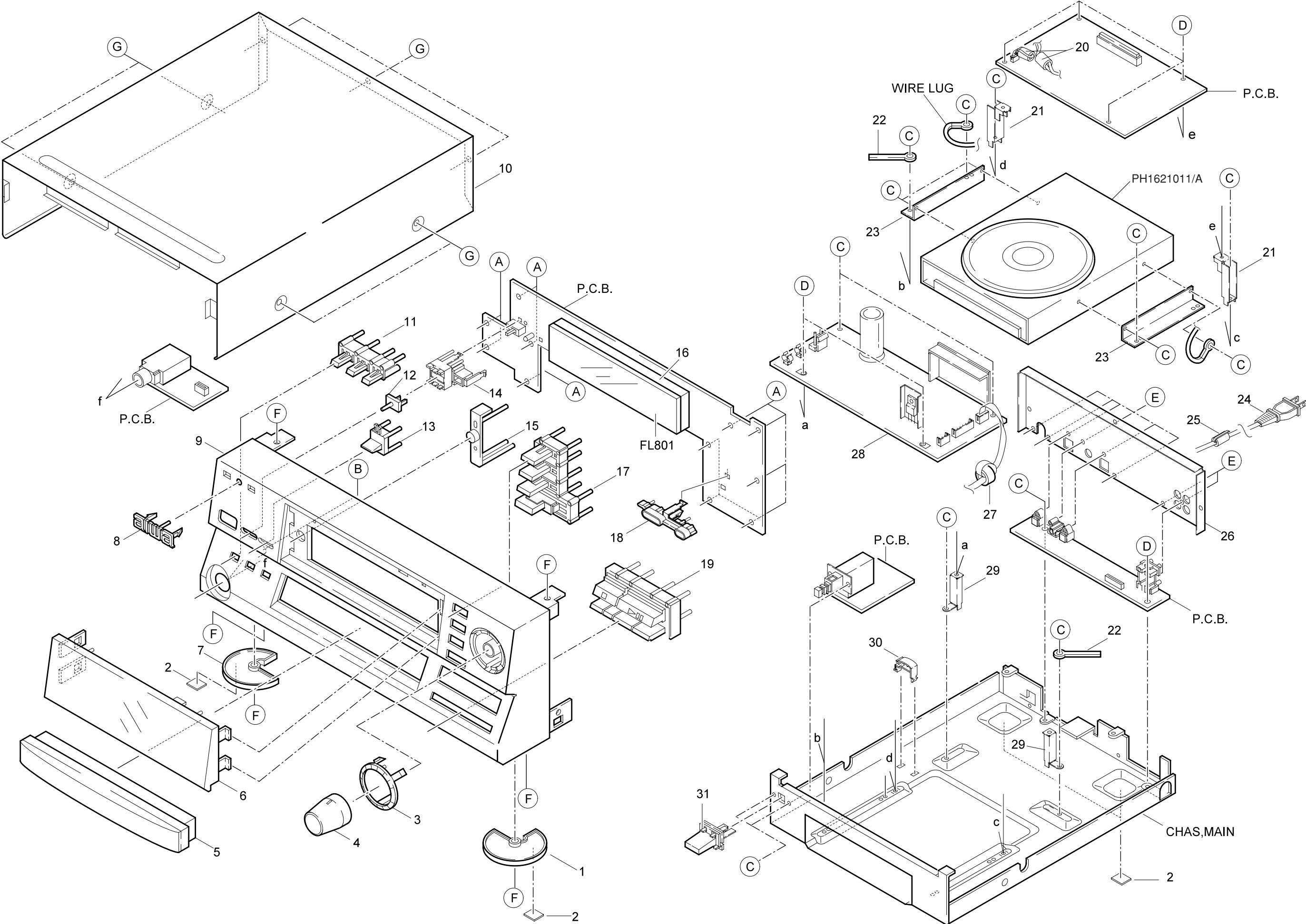
Pin No.	Pin Name	I/O	Description
42	$\overline{\text{LBS}}$	O	Low byte select.
43	IO	–	Not used.
44	$\overline{\text{UBS}}$	O	Upper byte select.
45	IO	–	Not used.
46	$\overline{\text{RAMSEL1}}$	O	RAM select 1.
47	IO	–	Not used.
48	$\overline{\text{RAMSEL0}}$	O	RAM select 0.
49	IO	–	Not used.
50 ~ 52	A0 ~ A2	I	Address bus.
53	NCONFIG	I	Dedicated configuration. For EPROM connection.
54	GND	–	Ground.
55	VCCIO	–	Power supply.
56	NSTATUS	I	Dedicated configuration pin. For EPROM connection.
57	IO	–	Not used.
58	A19	I	Address bus.
59 ~ 64	IO	–	Not used.
65	ILRCK	O	Audio data in LR channel clock.
66	IO	–	Not used.
67	OLRCK	O	Audio data out LR channel clock.
68	IO	–	Not used.
69	SDATAI_DIG	I	Digital serial data in.
70	NCEO	–	Not used.
71	SDATAO_DIG	O	Digital serial data out.
72	IO	–	Not used.
73	TDO	–	For JTAG connection. (Not used)
74 ~ 75	IO	–	Not used.
76	GND	–	Ground.
77	VCCINT	–	Power supply.
78	VCCIO	–	Power supply.
79	ISCLK	O	Audio data in serial clock.
80	IO	–	Not used.
81	OSCLK	O	Audio data out serial clock.
82	IO	–	Not used.
83	SDATAO_ANA	O	Analog serial data out.
84	IO	–	Not used.
85	SDATAI_ANA	I	Analog serial data in.
86	IO	–	Not used.
87	OMCLK	O	Audio data out master clock.
88	IO	–	Not used.
89	MCLKIN	I	Audio data in master clock.
90	GND	–	Ground.

Pin No.	Pin Name	I/O	Description
91	VCCIO	–	Power supply.
92	$\overline{\text{RES}}$	I	Hardware reset.
93	IO	–	Not used.
94	INIT_DONE	–	Not used.
95 ~ 96	IO	–	Not used.
97	RDYNBSY	–	Not used.
98 ~ 99	IO	–	Not used.
100	CLKUSR	–	Not used.
101	IO	–	Not used.
102	GND	–	Ground.
103	VCCINT	–	Power supply.
104	VCCIO	–	Power supply.
105	CONF_DONE	I/O	Dedicated configuration pin. For EPROM connection.
106 ~ 107	IO	–	Not used.
108	TCBL	I/O	Digital audio TCBL signal.
109	$\overline{\text{FSEL}}$	I	FPGA CS.
110	IO	–	Not used.
111	NCS	–	Not used.
112	IO	–	Not used.
113	$\overline{\text{UCS}}$	I	Upper memory CS.
114	IO	–	Not used.
115	TCBLINT	O	TCBL interrupt.
116	LRINT	O	LR clock interrupt.
117	NWS	–	Not used.
118	IO	–	Not used.
119	SRDY	O	Synchronous ready.
120	NRS	–	Not used.
121 ~ 122	IO	–	Not used.
123	DEV_OE	–	Not used.
124	IO	–	Not used.
125	DATA	I	Dedicated configuration pin. For EPROM connection.
126	GND	–	Ground.
127	VCCIO	–	Power supply.
128	DCLK	I	Dedicated configuration pin. For EPROM connection.
129	$\overline{\text{WR}}$	I	Write signal.
130	DEV_CLRN	–	Not used.
131	IO	–	Not used.
132	$\overline{\text{S1}}$	I	Status 1.
133	IO	–	Not used.
134	$\overline{\text{S2}}$	I	Status 2.
135	IO	–	Not used.

Pin No.	Pin Name	I/O	Description
136	ALE	I	Address latch enable.
137	IO	–	Not used.
138	$\overline{\text{BHE}}$	I	Bus high enable.
139	IO	–	Not used.
140	$\overline{\text{RD}}$	I	Read signal.
141	IO	–	Not used.
142	$\overline{\text{IDE_ENA}}$	I	IDE enable.
143	IO	–	Not used.
144	IDE_DIR	I	IDE direction.

IC, BU2872AK

Pin No.	Pin Name	I/O	Description
1 ~ 4	SW1 ~ SW4	I	General purpose input terminal. The input data can be sent to microprocessor in serial transmission. (Connected to VSS)
5	SO	O	Serial data are output to higher bits.
6	SI	I	Serial data are input from higher bits.
7	VSS	I	Connected to system ground.
8	SCK	I	Serial data is fetched at start-up.
9	CS	I	Serial initialization at "L". Valid when "H".
10 ~ 13	K1 ~ K4	I	Key scan data input terminal.
14	VDD	I	Connected to system power supply.
15 ~ 25	S1 ~ S11	O	Segment output terminal. Output is P-channel open drain having pull-down resistor.
26	G11	O	Output terminal for grid. Output is P-channel open drain having pull-down resistor.
27	VEE	I	Pull-down resistor for driver output is connected to this terminal.
28 ~ 37	G10 ~ G1	O	Output terminal for grid. Output is P-channel open drain having pull-down resistor.
38	VDD	I	Connected to system power supply.
39 ~ 42	L4 ~ L1	O	LED output terminal. CMOS output. (Pin 39 not used)
43	VSS	I	Connected to system ground.
44	OSC	I/O	External capacitor for oscillation is connected to this terminal.



MECHANICAL PARTS LIST 1 / 1

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION	REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	8A-AJ1-016-010		FOOT,RIGHT	21	8A-AJ1-203-010		HLDR,PWB 50
2	8A-AJ1-209-010		CUSH,FOOT 13.5-13.5-1.5	22	87-064-185-010		HLDR,WIRE
3	8A-AJ1-012-010		RING,REC VOL	23	8A-AJ1-202-010		HLDR,CD DRIVER
4	8A-AJ1-011-010		KNOB,RTRY REC VOL	△ 24	8Z-JBH-618-010		AC CORD,US BLK
5	8A-AJ1-005-010		PANEL,TRAY	25	87-085-189-010		BUSHING, CORD (U)
6	8A-AJ1-004-010		WINDOW,DISPLAY	26	8A-AJ1-008-010		CABI,REAR UST
7	8A-AJ1-017-010		FOOT,LEFT	27	87-003-317-010		F-BEAD,15-25-15 E251
8	87-B00-002-010		BADGE,AIWA 30 ABS SIL	△ 28	8A-AJ1-614-010		POWER UNIT,
9	8A-AJ1-001-010		CABI,FR	29	8A-AJ1-204-010		HLDR,PWB PU 30
10	8A-AJ1-002-010		CABI,STEEL	30	87-NF4-221-010		HLDR,CABLE
11	8A-AJ1-021-110		KEY,REC CONTROL	31	8A-AJ1-022-010		KEY,POWER ASSY
12	8A-AJ1-036-110		BTN,INPUT SEL	A	87-067-703-010		TAPPING SCREW, BVT2+3-10
13	8A-AJ1-013-010		LENS,REC	B	81-MK1-210-010		S-SCREW,VFT2+3-16
14	8A-AJ1-208-010		HLDR,INPUT SEL	C	87-067-688-010		BVTT+3-6
15	8A-AJ1-014-010		LENS,REMOTE CTRL	D	87-NF4-224-010		S-SCREW,IT3B+3-8 CU
16	88-SX1-203-210		GUIDE,FL	E	87-067-660-010		TAPPING SCREW, BVT2+3-8
17	8A-AJ1-024-010		KEY,REC FUNCTION ASSY	F	87-591-094-410		TAPPING SCREW, QIT+3-6
18	8A-AJ1-206-010		GUIDE,LED PLAY	G	87-067-641-010		UTT2+3-8 (W/O SLOT)BL
19	8A-AJ1-027-010		KEY,PLAY ASSY				
20	80-XM5-607-010		CORE,Z CAT1518-0730				

COLOR NAME TABLE

Basic color symbol	Color	Basic color symbol	Color	Basic color symbol	Color
B	Black	C	Cream	D	Orange
G	Green	H	Gray	L	Blue
LT	Transparent Blue	N	Gold	P	Pink
R	Red	S	Silver	ST	Titan Silver
T	Brown	V	Violet	W	White
WT	Transparent White	Y	Yellow	YT	Transparent Yellow
LM	Metallic Blue	LL	Light Blue	GT	Transparent Green
LD	Dark Blue	DT	Transparent Orange	GM	Metallic Green
YM	Metallic Yellow				

アイワ株式会社 〒110-8710 東京都台東区池之端1-2-11 ☎03(3827)3111 (代表)
AIWA CO.,LTD. 2-11, IKENOHATA 1-CHOME, TAITO-KU, TOKYO 110, JAPAN TEL:03 (3827) 3111